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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/407,133	09/27/1999	JOHN A. PINKNEY	LAMA114491	2342
26389	7590	09/27/2004	EXAMINER	
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347			LIU, SHUWANG	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/407,133

Applicant(s)

PINKNEY ET AL.

Examiner

Shuwang Liu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-9,11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8,9,11 and 13 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 5, 8, 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Koslar et al. (US 6614853).

As shown in figures 1 and 3, Koslar et al. discloses a transmitter and a receiver with a method for communicating over a wireless indoor communications channel, comprising:

(1) regarding claim 1:

generating (output from 4 in figure 1) a pulsed signal in which information is carried in the phase of the pulsed signal;

spreading the pulsed signal using a dispersive filter (6 and 7) to form a chirp spread spectrum signal (see figure 2);

transmitting (by 14) the chirp spread spectrum signal over a wireless indoor telecommunications channel;

receiving (by 30) the chirp spread spectrum signal at a receiver (figure 3);

despreading the chirp spread spectrum signal using an inverse dispersive filter (20 and 21, 41 and 42, or 49 and 50) that is matched to the dispersive filter to yield a received pulsed signal;

removing the phase of the received signal, using a phase demodulator (36), thereby generating cophased channel impulse responses (column 16, lines 45-47 and claim 1);

a low-pass filter (37 or 47) connected to the low pass filter as recited in claims;
and

a data extractor (48) recovering originally transmitted information from the data symbols and having data as output

(2) regarding claim 5:

in which the dispersive filter is a SAW filter (column 6, line 60-column 7, line 17).

(3) regarding claim 8:

a pulsed signal generator (1-5);

a dispersive filter bank (6, 7 in figure 1 a, 15 and 16 in figure 1b-d, and 20, 21, 24 and 25 in figure 1e) comprising plural filters, the dispersive filter bank being connected to receive a pulsed signal from the pulsed signal generator, where the excitation of each of plural filters corresponds to a different transmitted symbol value (pages 189-190), the output the dispersive filter bank being a chirp spread spectrum signal (see figure 2); and

an RF section (13 and 14) for upconverting the chirp spread spectrum signal for transmission.

(4) regarding claim 13:

the excitation of the plural filters is controlled by a signal from a data source (1-5).

(5) regarding claim 11:

As shown in figures 3a-3d, Koslar discloses the receiver comprising:

an RF receiving section (30) configured to produce a received chirp spread spectrum signal as output;

an inverse dispersive filter (20 and 21, 41 and 42, or 49 and 50) matched to the dispersive filter and connected to receive the chirp spread spectrum signal from the RF receiving section and generates a received pulsed signal;

a phase demodulator (36) connected to the inverse dispersive filter, the phase demodulator generating cophased channel impulse response from the received pulsed signal (column 16, lines 45-47 and claim 1);

a low-pass filter (37 or 47) connected to the low pass filter as recited in claims;
and

a data extractor (48) recovering originally transmitted information from the data symbols and having data as output

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brydon et al. (Radio Receivers and Associated Systems, 1989, International Conference on) in view of Koslar (US 6,404,338).

As shown in figures 1-4, Brydon et al. discloses a method and a transceiver of communicating over a wireless indoor telecommunications channel comprising:

(1) regarding claim 1:

generating (DPSK chirp signal in figure 4a) a pulsed signal in which information is carried in the phase of the pulsed signal (figure 4b);

spreading the pulsed signal using a dispersive filter (forward or reverse matched filter in figure 4 a) to form a chirp spread spectrum signal (see figure 4b);

transmitting the chirp spread spectrum signal over a wireless indoor telecommunications channel (see section HF chirp modem);

receiving the chirp spread spectrum signal at a receiver (figures 3 and 5);

despreading the chirp spread spectrum signal using an inverse dispersive filter (matched filter in figure 3) that is matched to the dispersive filter to yield a received pulsed signal (see section Increased keying rate); and

removing the phase of the received signal, using a phase demodulator (see figure 3 and figure 5), thereby generating cophased channel impulse responses.

Brydon et al. discloses all of the subject matter as described above except for specifically teaching a low-pass filter and a data extractor (demodulator) connected to the low pass filter as recited in claims.

Koslar, in the same field of endeavor, teaches a receiver (figure 6) comprising a low-pass filter (31) on the output of the demodulator and a data extractor (32 and 33) connected to the low pass filter, the data extractor recovering originally transmitted information from the data symbols and having data as output.

It is necessary to have lowpass filter and data extractor in the receiver in order to recover the transmitted information. It would be desirable to remove extraneous high frequency noise, improve system performance and recovering the information by using a lowpass filter and a data extractor in the receiver. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the low-

pass filter and the data extractor as taught by Koslar in the receiver of Brydon et al. in order to allow the receiver to recover the received information without high frequency noise and improve the system performance.

(2) regarding claim 2:

in which generating a pulsed signal comprises:

modulating a data signal onto a carrier using a phase differential modulator (DPSK); and
converting the modulated carrier into a pulsed signal (pages see figure 4b).

(3) regarding claim 3:

in which the chip signal is generated using plural dispersive filters (forward and reverse matched filters), each assigned to a particular symbol value, and the chirp spread spectrum signal is despread using plural inverse dispersive filters (matched filters) matched to corresponding ones of the plural dispersive filters (see section Increased keying rate).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brydon et al. and Koslar as applied to claim 1 above, and further in view of Matsui (US 6,049,563).

Brydon et al. and Koslar discloses all of the subject matter as described above except for teaching the receiver comprising an equalizer as recited in claim.

Matsui, in the same field of endeavor, teaches the receiver (figure 2) comprising an equalizer (111) to the cophased channel response to reduce intersymbol

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interference caused by the channel multipath (column 3, lines 3-14 and column 5, lines 1-60).

It would be desirable to reduce the multipath distortion and avoid deterioration of the transmission quality (see column 3, lines 3-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the equalizer as taught by Matsui in the receiver of Brydon et al. in order to reduce the multipath distortion and avoid deterioration of the transmission quality.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koslar (US 6,404,338) in view of Brydon et al. (Radio Receivers and Associated Systems, 1989, International Conference on).

Koslar discloses all of the subject matter except for teaching of the pulsed signal generator comprises a differential phase modulator connected to receive data from the data source.

Brydon et al., in the same field of endeavor, teaches the transmitter (figure 4) comprising a differential phase modulator.

It would be desirable to achieve good performance in frequency selective fading and additive white Gaussian noise and adaptively excised interference from other high frequency users (see Summary of Brydon et al.). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the a differential phase modulator as taught by Brydon et al. in the transmitter of Koslar et al.

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in order to achieve good performance in frequency selective fading and additive white Gaussian noise and adaptively excised interference from other high frequency users.

Allowable Subject Matter

8. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (571) 272-3036.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (571) 272-3056.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu
Primary Examiner
Art Unit 2634

September 22, 2004